TRANSPORTATION ELEMENT

TABLE OF CONTENTS

FIGURES

TRANSPORTATION ELEMENT

I. INTRODUCTION

1. Growth Management Act Requirements

The Growth Management Act (GMA) requires jurisdictions to prepare a transportation element that includes the following sub-elements and features:

A. Land use assumptions used in estimating travel.

B. Facility and service needs, including:

1) An inventory of air, water and land transportation facilities and services, including transit alignments, to define existing capital facilities and travel levels as a basis for future planning;

2) Level of service standards for all arterials and transit routes to serve as a gauge to judge performance of the system. These standards should be regionally coordinated;

3) Specific actions and requirements to bring into compliance any facilities or services that are below an established level of service standard;

4) Traffic forecasts for at least ten years based on the adopted land use plan to provide information on the location, timing and capacity needs of future growth;

5) Identification of system expansion needs and transportation system management needs to meet current and future demands.

C. Financing, including:

1) An analysis of funding capability to judge needs against probable funding resources;

2) A multi-year financing plan based on the needs identified in the comprehensive plan. Portions of this plan will be the basis for the six-year street, road, or transit program required by state law;

3) If probable funding falls short of meeting identified needs, a discussion of how additional funding will be raised or how land use assumptions will be reassessed to ensure that level of service standards will be met;

D. Intergovernmental coordination efforts, including an assessment of the impacts of the transportation systems of adjacent jurisdictions.

E. Demand management strategies.

F. Collaborative plan consistency. The GMA requires that regional agencies certify that the transportation element is consistent with regional transportation plans. Puget Sound Regional Council (PSRC) is the regional agency with this authority. PSRC measures consistency with the MTP by focusing on five items:

1) Consistency with the land use element,

2) Identification of facilities and service needs,

3) Discussion of financing for transportation facilities and services,

4) Description of intergovernmental coordination efforts, and,

5) Development of transportation demand strategies.[1]

In addition, PSRC reviews plans of cities and counties in the central Puget Sound region for consistency with the Clean Air Conformity Act. Consistency is measured by the presence of minimum policy language and provisions committed to developing programs and measures addressing federal and state air quality laws.

G. Other requirements. In addition to the GMA requirements, the Transportation Element must also comply with Destination 2030. Destination 2030 is the transportation element of Vision 2040, the Puget Sound region's growth management, economic, and transportation strategy. Destination 2030's seven main transportation strategies are:

1) Expanded capacity for all transportation modes

2) Growth and land use opportunities

3) System management and operations opportunities

4) Programs to manage future growth of single-occupant vehicle travel

5) Financial planning and more rational transportation pricing

6) Improved system safety

7) Enhanced transportation security

These transportation policy areas are addressed in this Element.

2. Purpose of a Transportation Element

The Transportation Element has three functions: to examine the existing and future traffic circulation system, to address the relationship between transportation and land use, and to provide the background and analysis so that the City can ensure that transportation improvements are concurrent with development. More specifically, the Transportation Element considers the location and condition of the existing traffic circulation system; the cause, scope, and nature of transportation problems; the projected transportation needs; and plans for addressing all transportation needs while maintaining established level of service standards. The Transportation Element addresses motorized and non-motorized transportation needs.

The type and availability of transportation facilities are major factors in the development of land use patterns; while conversely, the way that land is used greatly influences the need and location for new transportation facilities. The relationship between transportation and land use is one of continuous interaction and their planning must be coordinated.

One way the relationship between transportation and land use is measured is through the concept of concurrency. The GMA requires jurisdictions to apply the concept of concurrency to transportation facilities. Jurisdictions are to establish level

[1] From the PSRC adopted policy and plan review process, revised September 2014.

of service standards with measurable criteria to judge the adequacy of roadway service provision. Transportation improvements are required to be made concurrent with the development, either in place at the time of development or with a financial commitment to complete the improvements within six years of development. It is up to each jurisdiction to determine the acceptable timetable for completion of the improvements, as mandated in its concurrency management regulations. For example, the jurisdiction's regulations may state that improvements must be completed no more than two years after the development is complete, rather than in six years.

II. TRANSPORTATION ELEMENT GOALS, OBJECTIVES, AND POLICIES

The following goals and policies outline the City's desire to preserve the character, natural environment and environmentally sensitive areas of the City while providing opportunities for present and future residents consistent with the requirements of State Law.

GOAL TR1.0: PROVIDE A MULTI-MODAL TRANSPORTATION SYSTEM WHICH MEETS THE NEEDS OF MOTORIZED AND NON-MOTORIZED TRAVEL.

Policy TR1.1: Develop a system of transportation facilities and services that serves the access and circulation needs of City residents and visitors.

Policy TR1.2: Establish and apply a functionally defined hierarchy of streets and appropriate design guidelines for street development.

Policy TR1.3: Establish an on-going street right-of-way review program in order to bring existing streets up to standards and to plan for new streets and improvements.

Policy TR1.4: Work with Community Transit to ensure that transit service within Brier is designed to meet, to the extent possible, the needs of the users and to ensure that the public is aware of the service.

Policy TR1.5: Collaborate with the State DOT and Community Transit to continue to offer convenient transit connections such as between the central Brier Park and Ride and bus route number 111 with service to the Mountlake Terrace Park and Ride.

Policy TR1.6: Participate in programs and provide information to the citizens on transportation demand management techniques such as ridesharing, promoting transit use, and increasing the use of non-motorized transportation in order to reduce the number of automobile trips within Brier and to help reduce pollutants that affect the air quality of the Puget Sound region.

Policy TR1.7: Provide handicap access in compliance with federal laws for all transportation components, including buses, nonresidential parking areas, streets, sidewalks, and multi-use trails.

Policy TR1.8: Adopt a minimum peak hour Level of Service as follows:

Streets

"C" for all Minor Traffic and Neighborhood Streets

"D" for all Major Traffic Streets

Intersections

"C" for Neighborhood-Minor Traffic Streets / Neighborhood-Minor Traffic Streets

"D" for Neighborhood-Minor Traffic Streets / Major Traffic Streets

"D" for Major Traffic Streets / Major Traffic Streets

GOAL TR2.0: ENSURE THE SAFETY OF THE TRAVELING PUBLIC.

Policy TR2.1: Attempt to reduce accidents by analyzing transportation elements to determine unsafe locations.

Policy TR2.2: Provide for a safe integration of bicycle, pedestrian, equestrian, and motorized networks.

GOAL TR3.0: PROVIDE COST EFFECTIVE TRANSPORTATION FACILITIES AND SERVICES COMPATIBLE WITH AND SUPPORTIVE OF THE CITY'S RESIDENTIAL CHARACTER.

Policy TR3.1: Strive for equitable allocation of improvement cost responsibilities among public jurisdictions and the private sector.

Policy TR3.2: Coordinate land use development plans with transportation and mobility needs for the community to promote non-motorized travel, pedestrian travel, and transit use.

Policy TR3.3: Develop and adopt concurrency management regulations.

Policy TR3.4: The City should pursue and strategize the funding for transit-related safety enhancements such as bus pullouts and similar infrastructure.

Policy TR3.5: Establish transit communications services, and establish connections to other transit services and regional transit services such as Sound Transit and Community Transit.

GOAL TR4.0: ESTABLISH A TRANSPORTATION SYSTEM AND FACILITIES WHICH FULFILL BRIER RESIDENTS' DESIRE TO REMAIN A RESIDENTIAL COMMUNITY WHICH ENCOURAGES MINIMAL, NON-LOCAL TRAFFIC.

Policy TR4.1: Plan and design streets to provide a logical network related to all segments of the planning area and to the community at large to discourage non-local trips.

Policy TR4.2: Provide adequate traffic flow on Major Traffic streets while limiting traffic on all other streets.

Policy TR4.3: Continue to pursue the current road maintenance program

and encourage property owners to maintain the appearance of the public right-of-way adjacent to their property.

Policy TR4.4: Continue to upgrade City streets to current adopted standards based on availability of funds and existing physical constraints.

Policy TR4.5: Continue the City's neighborhood traffic control program in coordination with Public Works and the Police Department to address specific neighborhood traffic concerns.

Policy TR4.6: Encourage safety and beautification projects for all roads in the City.

Policy TR4.7: Encourage, where possible, the provision of landscaping strips on all streets at the time of acquisition and / or development.

Policy TR4.8: Recognize the needs of and incorporate designs for emergency vehicle, refuse collection and public transportation in city road design and construction.

Policy TR4.9: Develop traffic mitigation priorities, with roundabouts being a high priority, in order to preserve the character of Brier.

GOAL TR5.0: PROVIDE TRANSPORTATION FACILITIES AND SERVICES IN A MANNER THAT PROTECTS AND ENHANCES THE ENVIRONMENT.

Policy TR5.1: Avoid siting transportation facilities in environmentally sensitive areas.

Policy TR5.2: Implement appropriate mitigating measures where impacts are identified.

Policy TR5.3: Encourage buffering between motorized travel and non-motorized transportation modes by physical space, landscape strips or other physical or design methods.

Policy TR5.4: Evaluate all land use permit applications for biofiltration and storm drainage requirements, and capital improvements (for example, curbs and gutters improvements).

GOAL TR6.0: DEVELOP A FUNCTIONAL, SAFE AND CONVENIENT SYSTEM OF PEDESTRIAN, BICYCLE AND EQUESTRIAN PATHWAYS AND FACILITIES THROUGHOUT THE CITY.

Policy TR6.1: Encourage the development of pedestrian right-of-way and lighted trails which can provide safe passage between neighborhoods, schools, businesses, and recreational areas.

Policy TR6.2: Provide for the safe and convenient integration of bicycle, pedestrian, equestrian and motorized networks.

Policy TR6.3: Provide sidewalks, or walkways on at least one side of every

street, especially near schools.

Policy TR6.4: Require sidewalks on all streets designated as school walk routes between schools and major and minor traffic streets.

Policy TR6.5: Consider and encourage the designation of additional public rights-of-way for trails and walkways for access and circulation of non-motorized travel.

Policy TR6.6: Encourage sidewalks, bikeways and multi-use trails along public roads.

Policy TR6.7: Ensure new curb and gutter intersections meet ADA standards. Strive to upgrade existing curb and gutter intersections to meet ADA standards where feasible.

GOAL TR7.0: COMMUNICATE AND COORDINATE THE TRANSPORTATION NEEDS AND INTERESTS OF BRIER WITH ADJACENT COMMUNITIES AND APPLICABLE TRANSPORTATION AGENCIES.

Policy TR7.1: Communicate and coordinate with the surrounding areas so their transportation plans can be adapted in order to minimize cross-traffic through Brier.

Policy TR7.2: Participate with other jurisdictions in the planning process of regional transportation systems.

GOAL TR8.0: PROVIDE PARKING FACILITIES AND CONTROLS THAT COMPLEMENT THE ROAD SYSTEM.

Policy TR8.1: Promote adequate off-street parking for all land uses.

Policy TR8.2: Establish design requirements for nonresidential land uses.

GOAL TR9.0: STRIVE TO ATTAIN OR MAINTAIN FEDERAL AND STATE AIR QUALITY REQUIREMENTS.

Policy TR9.1: Support the air pollution abatement and prevention activities of the Puget Sound Air Pollution Control Agency (PSAPCA), including the requirements of the federal and state clean air acts.

Policy TR9.2: Promote and support public education efforts regarding air quality impacts.

III. CONTEXT FOR THE ELEMENT

1. Transportation Element Background

This Transportation Element is based on previous plan updates that incorporated the requirements of the GMA and requirements for certification by the PSRC and Destination 2030.

For the initial Final Comprehensive Transportation Plan (1991), Brier's transportation system was inventoried and entered into a geographic database. Streets, walkways, and trails were classified, using criteria developed by the City. Deficiencies of streets and non-motorized facilities were then identified, and needed transportation improvement projects and programs were identified. As part of the 2000 Plan Update, further analysis of the transportation system in Brier was undertaken. This analysis included identifying current levels of service for major streets and forecasting to 2012 future levels of service. The impacts of future growth in Brier on adjacent areas were also analyzed. Transportation Demand Management techniques appropriate for Brier was explored. An updated project needs list was developed to address current and future needs over the next six years.

To update this inventory and forecast for the 2015 Plan Update, the original transportation system inventory was augmented with data from recent studies and records of development in the city as well as through field checks. In addition, current traffic volumes were measured, supplemented by spot counts and approach volumes factored accordingly. Average Daily Trip (ADT) information was projected based on 2015 traffic counts. Projected 2035 traffic volumes were forecast and consequent levels of service projected.

In terms of citizen and agency review, The GMA requires early and continuous public participation.[2] That participation started during the process to draft the Final Comprehensive Transportation Plan in 1991 (eleven workshops and public meetings were held and the draft plan was sent to adjacent cities and interested agencies). It continued as part of the 2000 Update (when additional community meetings and Council hearings were held during the Comprehensive Plan review and adoption process). The Planning Commission and City Council held public meetings and a public hearing as part of the 2015 update, also.

2. Existing Conditions

A. Regional Setting

Brier has a population of 6,087 as of 2010 within an area of 1,259 acres. The city is located in Southwest Snohomish County and lies just north of the King / Snohomish County border. Brier's western border is shared with the City of Mountlake Terrace, while to the north of the city is unincorporated Snohomish County and to the east is unincorporated Snohomish County and the City of Bothell. Brier lies in the midst of an urban area and its transportation systems are

[2] See RCW 36.70A.140, Comprehensive Plans – "Ensure public participation."

affected by and affect the communities surrounding it (see ***Figure 1***).

Brier is located between regional Interstates 5 and 405. Access to these major north / south freeways is provided by a series of minor arterials (as classified by the Snohomish County Arterial Plan).

B. Transportation System

Brier has a total of 28.5 miles of roadway with the majority of these roadways being low-volume neighborhood streets. Increasing cross-town commute traffic is a concern of residents. There are no arterials within Brier. The highest level of street is a collector that typically connects to an arterial outside of the City. See Table 1 for Street Classifications Summary of Design and Planning Features

The streets in Brier classified by Snohomish County as collectors (or Major Traffic Streets as they are classified in the City) are:

- Brier Road
- Poplar Way
- 228th Street SW

Minor Traffic Streets, tying into the Major Traffic Streets, include:

- Old Poplar Way
- Vine Road / 216th Street SW east of Poplar Way
- 214th Street SW

Snohomish County's designation for a "Collector," also known as a "Collector Arterial," is equivalent to Brier's "Major Traffic Street" classification. Daily volumes on streets so classified are 3,000 vehicles per day or more. Snohomish County's lowest street designation is a "Non-arterial." This classification is equivalent to Brier's "Minor Traffic Street" (1,000 to 3,000 vehicles per day) and "Neighborhood Street" (less than 1,000 vehicles per day) designations. See Appendix B for a more detailed discussion of these classifications.

Other elements of Brier's transportation system include air transportation in the region (via major airports to the south – SeaTac and Boeing Field, and to the north via Paine Field), which is accessible by highway, and bus transportation provided by Community Transit (CT). Bus service is available in Brier on the "111" route. This route provides service between the Brier Park and Ride lot (located next to City Hall at 228th Street SW and 29th Avenue W) and the Mountlake Terrace Transit Center located at 236th Street SW and Interstate 5. Various connections can be made at the transit center to travel throughout the region including major employment centers such as Seattle and Everett.

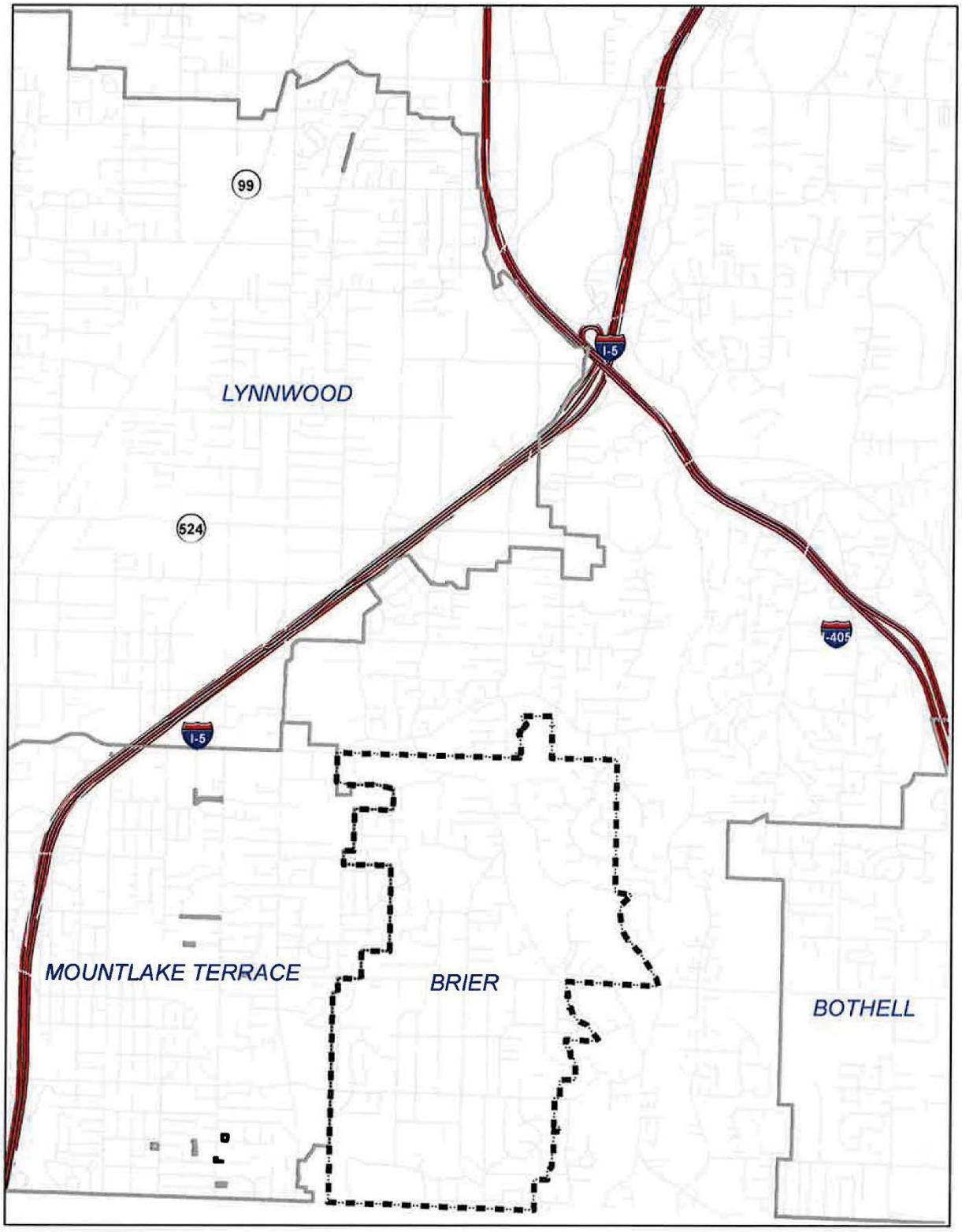


Figure 1: Brier Vicinity Map

Table 1: Street Classifications - Summary of Design and Planning

CATEGORY	NO. OF LANES	AVG. DAILY TRAFFIC	TYPICAL SPEED (MPH)	TYPICAL SPACING	TRANSIT USE	ON-STREET PARKING	TURN POCKETS / 2-WAY LN	CROSS WALKS	TRAFFIC DIVERTERS	THROUGH CONNECTIONS
MAJOR ST.	2+	3,000+	30	Mile	Yes	Possible	Yes	Yes	No	Yes
MINOR ST.	2+	1,000 to 3,000	20-30	1 / 4 Mile	Possible	Possible	Possible	Yes	No	Possible
NBHD ST.	2	1,000 or less	25	500 to 1,000 ft.	Possible	Possible	No	Possible	Possible	No
LOCAL NBHD. ST.	2	500 or less	20-25	100 to 500 ft.	No	Possible	No	Possible	Possible	No
SCENIC ROUTE	ANY OF THE ABOVE FEATURES POSSIBLE									
BICYCLE LANE	4-5 ft.	1-3K+	25-30	Continuous System	Possible	No	Possible	Possible	No	Possible
SIGNED BICYCLE ROUTE	2+	0-3K+	15-30	Continuous System	Possible	No	Possible	Possible	Possible	Possible
WALKWAY / SIDEWALK	5+ ft.	–	–	Citywide	–	–	–	Possible	–	Yes
MULTI-USE TRAIL	3+ ft.	–	–	Citywide	–	–	–	Possible	–	Yes
OFF-ROAD TRAIL	Varies	–	–	Citywide	–	–	–	Possible	–	Yes

There are no known railroad rights of way in Brier; therefore that transportation mode is not available for either personal ridership or movement of freight and goods. The expeditious movement of freight and goods via truck in and through the City is not an issue as there is limited commercial development and there are no arterials. The postal service and other delivery services have not experienced any difficulty in providing services within Brier.

Brier does not have any state-owned transportation facilities, or any facilities with statewide significance.

C. Land Use

Land use is an important element of any transportation system. ***Figure 1*** in the Land Use Element shows the land use in Brier. The majority of Brier's land use (over 80%) is zoned for single-family residential. Neighborhood business (commercial) land use is restricted by zoning to a 2.5-acre area. As a result, Brier residents travel outside of Brier for shopping and employment. There are no major City destinations that attract large volumes of traffic to the City. Within Brier, land use such as neighborhood businesses, parks, and schools are trip destinations for residents. These destinations include:

- Brier Park
- Brierwood Park
- Bobcat Park
- Locust Creek Park
- City Lights Woods Park
- Brier Patch Park
- Brier Horse Arena
- Brier Elementary School
- Brier Terrace Middle School
- Brier City Hall
- Brier Library
- Brier Community Church
- Saint Paul's Orthodox Church
- Brier Neighborhood Business Area

The city may rezone the properties across the street from the city's business district to the business district zoning (Neighborhood Business zone). This possible rezone area encompasses 2.65 acres. If this change occurs, it is not expected to have a noticeable impact on the city's transportation system.

D. Transportation System Inventory

As part of the Final Comprehensive Transportation Plan development in 1991, a survey of the existing conditions of Brier's streets, walkways and trails was conducted. The survey included a field check of every street in Brier, as well as examination of undeveloped areas that potentially might include trails or walkways. This survey collected information on:

- Right-of-Way Width
- Number of Lanes
- Sidewalks
- Drainage
- Emergency Access
- Lane Widths
- Grades
- Speed Limits
- Geometries
- Pavement Type
- Pavement Condition
- Trails and Paths
- Abutting Land Use

The City annually updates projections for road maintenance in its 6 year Transportation Improvement Program (TIP).

This information was collected for each intersection-to-intersection segment on Brier's street system and then entered eventually into a computerized database.[3] This data was updated in 2004 through review of City records and field checks. This data has not significantly changed from the 2004 update to this 2015 update.

Overall, Brier's streets are two-lane roads with a maximum speed limit of 30 miles per hour. The Brier Road / Poplar Way corridor, which is Brier's main north / south street, has 20-foot wide lanes along most of its length. 228th Street SW, the main east / west street, has 11-foot-wide lanes. Other streets typically have two lanes varying from 9 feet to 16 feet in width. Storm water

[3] This database is contained in a document titled "City of Brier Roadway Inventory, August 20, 1996" (on file in the Brier Public Works Department).

drainage is provided by open ditches or by curbs, gutters and closed drain pipes.

With the exception of newer subdivisions, several minor streets, and Brier Road, curbs and gutters are not in place. Hilly terrain and curving roads result in geometric (sight distance, etc.) and radius problems. Road dips, slopes, and sharp curves also create problems. These known problems areas are shown on ***Figure 2*** and are listed here:

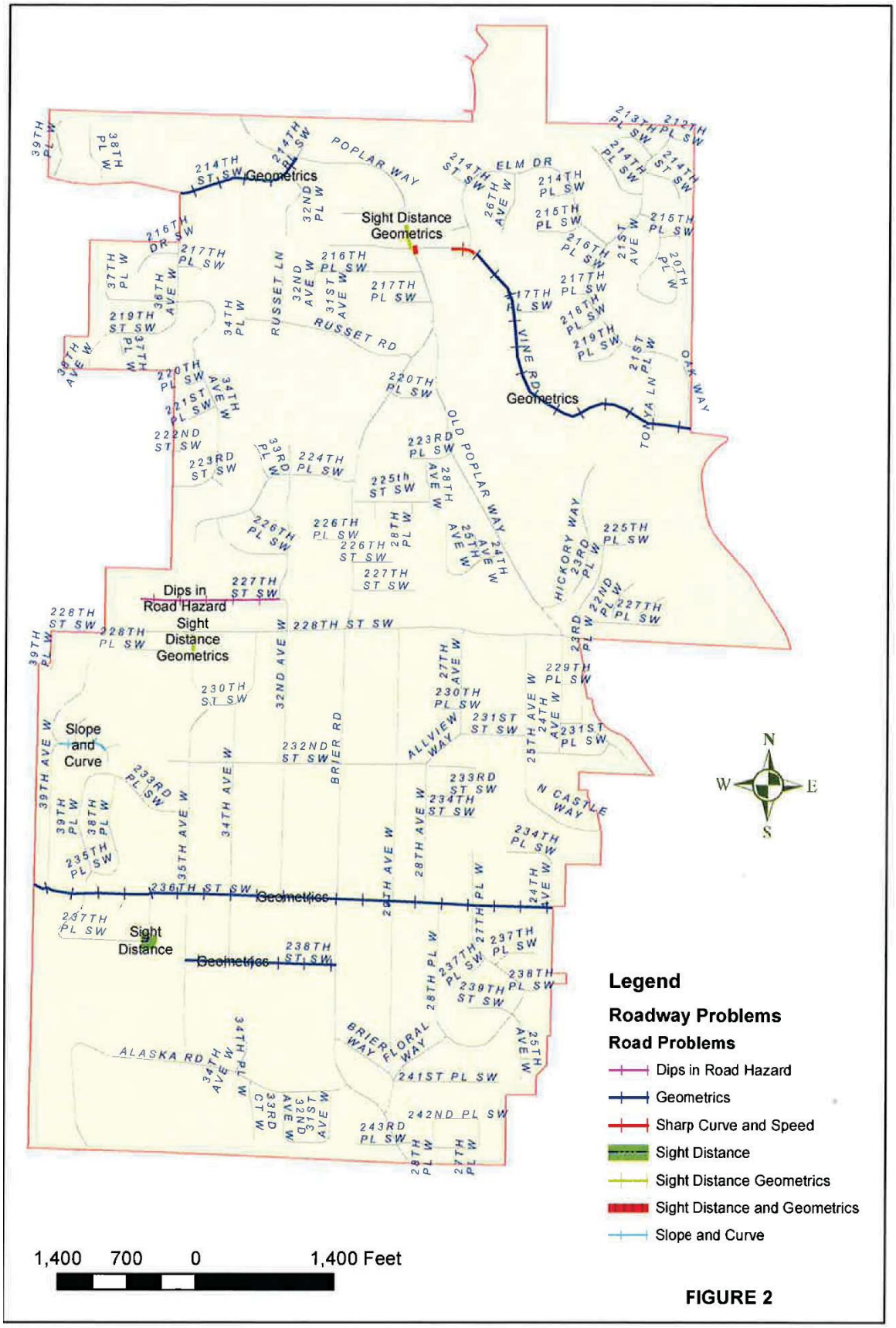
- 214th Street SW (geometries)
- Vine Road (geometries)
- 236th Street SW (geometries)
- 238th Street SW (geometries)
- 227th Street SW from 32nd Avenue W to end (dips in road / hazards)
- 232nd Place SW (3900 block – slope and curve)
- 237th Place SW and 36th Place W (parked cars combined with sight distance problems)
- 216th Street SW at Poplar Way and at Elm Drive (sharp curves combined with speeding)
- 35th Avenue and 228th St SW (sight distance and geometries)
- 216th Street and Poplar Way (sight distance and geometries)

Figure 3 shows the location of roadways with either old overlay (greater than 10 years), that will need replacing, or with obvious problems.

No new collectors were built in the last five years, however Brier Road from south City limits to intersection of 228th Street was overlaid in 2014 using Transportation Improvement Board (TIB) funds. Further the City was awarded TIB funds to extend this overlay along Brier Road from 228th Street to intersection with Old Poplar Way. In addition, new residential connectors were built as well as sidewalk extensions.[4]

Brier's current transportation system has some facilities for non-motorized use. Most prominent is a multi-use trail along the east side of Brier Road / Poplar Way. In addition, in many parts of Brier, there is informal use of the roadway by equestrians, pedestrians, and bicyclists.

[4] According to the Public Works Department, since 2000 new sidewalks were installed on 35th Avenue W from 228th Street SW to Alaska Street; on Old Poplar Way from Poplar Way to 228th Street SW except for one property as well as 233rd Place SW from 35th Avenue W to 37th Avenue W.


Geometrics
Sight Distance Geometrics
Geometrics
Dips in Road Hazard
Sight Distance Geometrics
Slope and Curve
Geometrics
Sight Distance
Geometrics
Legend
Roadway Problems
Road Problems
Dips in Road Hazard
Geometrics
Sharp Curve and Speed
Sight Distance
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Sight Distance and Geometrics
Slope and Curve
1,400 700 0 1,400 Feet
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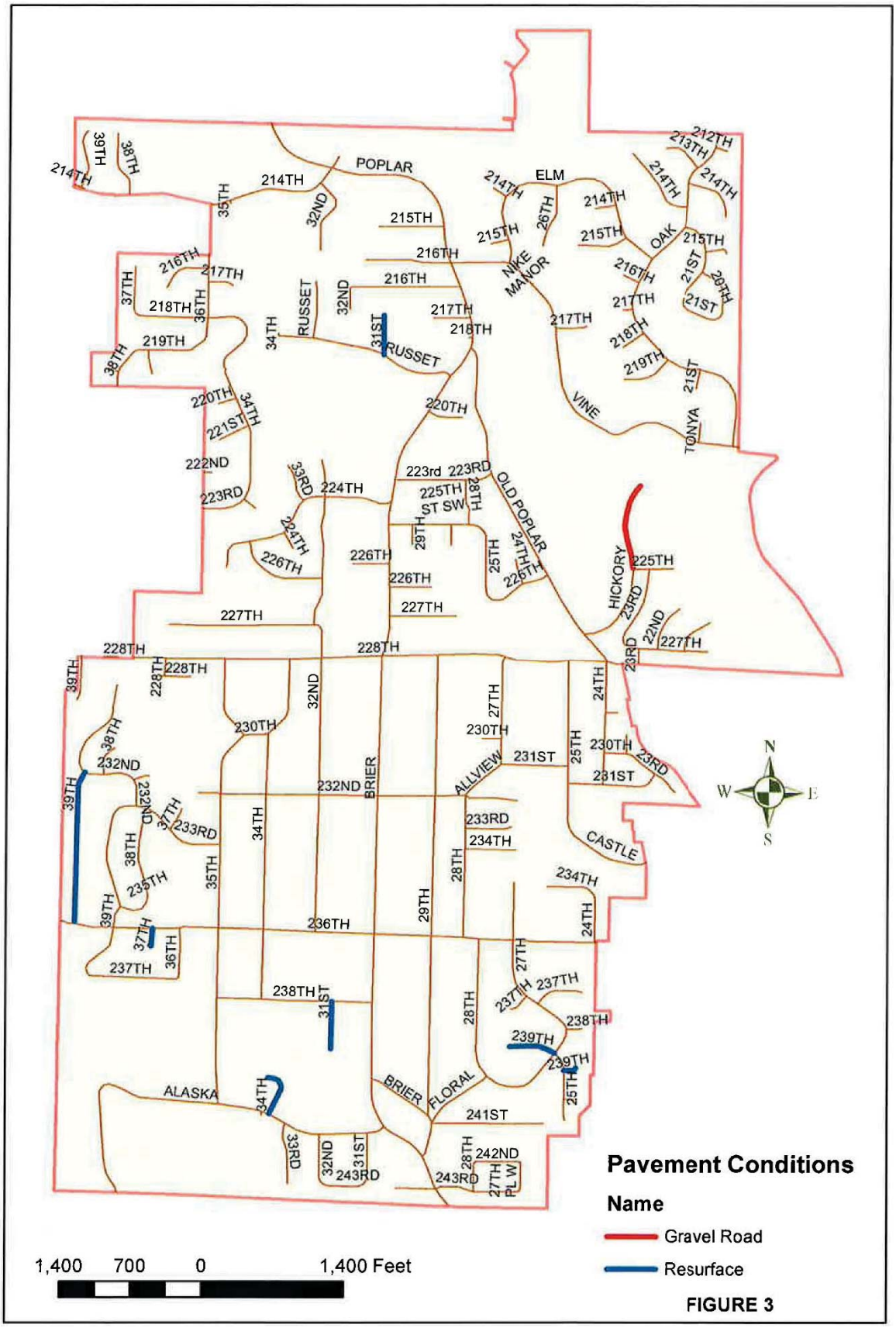
FIGURE 2


POPLAR
ELM
NIKE MANOR
OAK
RUSSET
VINE
TONYA
OLD POPLAR
HICKORY
ALLVIEW
CASTLE
BRIER
FLORAL
ALASKA
214TH
215TH
216TH
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219TH
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225TH
226TH
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228TH
230TH
231ST
232ND
233RD
234TH
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236TH
237TH
238TH
239TH
241ST
242ND
243RD
N
W
E
S
Pavement Conditions
Name
Gravel Road
Resurface
1,400 700 0 1,400 Feet

FIGURE 3

E. Historical and Forecast Population Growth

Brier and the areas around Brier experienced rapid growth in the late 1970s and 1980s, and has slowed since. Brier's population increased by 78.0% between 1980 and 1990 with the number of housing units almost doubling. Between 1990 and 2000, Brier's population grew by 25.7% while the number of housing units increased by 16.1%. ***Table 2*** shows the historical growth of Brier. The slowing growth rate between 1990 and 2010 is similar to what occurred in older urban areas elsewhere in Snohomish County as the supply of vacant land decreased. The recession had a slight impact on population growth from 2000 to 2010, impacting mostly the last three years of the decade.

Population in Brier in the next two decades is expected to increase to 7,011 by 2035, an increase of 15.20%.

Table 2: Historical and Forecast Population Growth

					% CHANGE	% CHANGE	% CHANGE
POPULATION	1990	2000	2010	2035	1990-2000	2000-2010	2010-2035
Population [5]	5,210	6,548	6,087	7,011	25.7%	-7.0%	15.2%
Housing Units [6]	1,822	2,115	2,220	2,484[7]	16.0%	0.4%	12.0%

F. Traffic Volumes

Existing traffic volumes on selected Brier streets were collected in 2015 by City Public Works Staff. Estimated 2015 Average Daily Traffic Volumes (ADT) resulting from the traffic counts is shown in ***Figure 4***. The highest volume streets within Brier are 228th Street SW and Brier Road / Poplar Way. 228th Street SW west of Brier Road carries more than 8,000 daily vehicles, while Brier Road / Poplar Way carries more than 9,000 daily vehicle trips.

These volumes reflect the travel pattern of Brier residents and the surrounding communities. Brier Road / Poplar Way carry north / south trips through the City and 228th Street SW carries east / west trips.

[5] 1990 population figures are from Washington State's Office of Financial Management. 2000 and 2010 population figures are from the U.S. Census Bureau – Census 2000. The 2035 population estimate was developed by Snohomish County using Puget Sound Regional Council's (PSRC) population forecasts as well as the State Office of Financial Management (OFM) forecasts.

[6] 1990 and 2000 housing unit figures are from Washington State Office of Financial Management. 2010 housing unit figures are from U.S. Census Bureau.

[7] 2,220 (housing units in 2010) plus 280 (minimum projected housing units needed to accommodate 2035 population) =2,484. See the Land Use Element, Residential land Area Requirements section for a more detailed discussion of needed housing units for 2035.

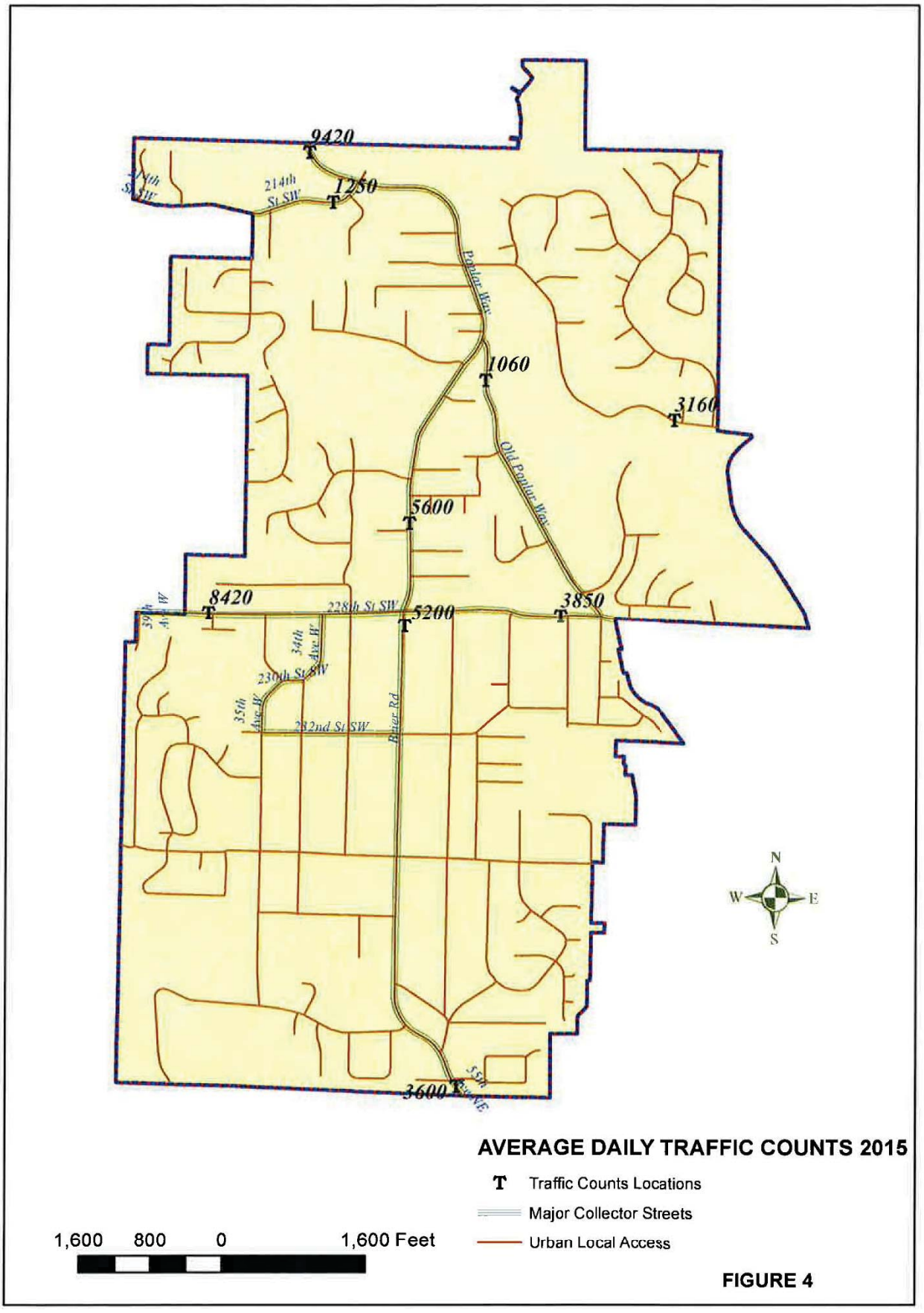

9420
214th St SW
1250
Poplar Way
1060
3160
Old Poplar Way
5600
8420
228th St SW
5200
3850
39th Ave W
34th Ave W
230th St SW
35th Ave W
232nd St SW
Brier Rd
3600
N
W
E
S
AVERAGE DAILY TRAFFIC COUNTS 2015
T Traffic Counts Locations
Major Collector Streets
Urban Local Access
1,600 800 0 1,600 Feet

FIGURE 4

G. Collisions

The City of Brier tracks accident history data. The latest available tabulated data is from January 1, 2011 through December 30, 2014. According to the summary report, the following locations have experienced from two to five accidents during that three-year period:

- Brier Road near 236th Street SW (2 accidents)
- Brier Road in the 22900 block (2 accidents)
- 216th Street near Poplar Way (2 accidents)
- 228th Street near Brier Road (2 accidents)
- 214th Street SW near 32nd Avenue W (2 accidents)

There was one car-pedestrian accident at 3200 214th St SW during December 2014. In general, five accidents or more at a single location in a twelve-month period would trigger the review for improvements, including stop signs or signals, if warranted. None of these locations fit those criteria.

H. Travel Patterns

Current travel patterns reflect the residential nature of the City. Residents travel west to Mountlake Terrace (via 228th Street SW and 214th Street SW) and north to Lynnwood (via Poplar Way) where there are opportunities for employment, shopping, entertainment, dining or to reach I-5 for travel to Seattle, Everett, or Bellevue / East Side. They also head east through Bothell via Vine Road, Atlas Road, and 228th Street SW, where there are opportunities for employment, entertainment and dining in the Canyon Park and North King County areas. Residents travel south through Lake Forest Park to access north Seattle for opportunities for employment, to access I-405 and the East Side or for recreational opportunities on Lake Washington, or the Burke-Gilman Bicycle Trail.

3. Level of Service

A. Level of Service Definitions

Level of service is generally defined as the ability of a roadway or intersection to carry the volume of traffic. The level of service (LOS) is typically measured using a six-tiered rating system that has become a standard used by the majority of jurisdictions in the region.

Level of service is an indicator of the quality of traffic flow at an intersection or road segment. The LOS grading ranges from A to F, such that LOS A is assigned when no delays are present and low volumes are experienced. LOS F indicates long delays and / or forced flow.

B. Intersection Level of Service Measures

Table 3 summarizes the delay range for each level of service at signalized and non- signalized intersections, and describes the prevalent traffic characteristics of each. The methods used to calculate the levels of service are described in the 2010 Highway Capacity Manual (Special Report 209, Transportation Research Board).

Table 3: Level of Service Measures for Signalized and Non-Signalized Intersections[8]

	DELAY RANGE (SEC)	
LOS	SIGNALIZED INTERSECTION	NON-SIGNALIZED INTERSECTION
A	≤ 10	≤ 10
B	> 10 to ≤ 20	> 10 to ≤ 15
C	> 20 to ≤ 35	> 15 to ≤ 25
D	> 35 to ≤ 55	> 25 to ≤ 35
E	> 55 to ≤ 80	> 35 to ≤ 50
F	≤ 80	≤ 50

Level of service for signalized intersections is defined in terms of control delay. Control Delay alone is used to characterize LOS for the entire intersection or approach. Control delay which is also a surrogate measure of driver discomfort and fuel consumption. Total control delay is the difference between the travel time actually experienced and the *reference travel time* that would result during base conditions (i.e., the absence of traffic control, geometric delay, any incidents, or as a result other vehicles). It should be noted that there are not any signalized intersections within the City limits.

The LOS for two-way stop-controlled (TWSC) and all-way stop-controlled intersections, are somewhat different from the criteria used for signalized intersections primarily because user perceptions differ among transportation facility types. The expectation is that a signalized intersection is designed to carry higher traffic volumes and will present greater delay than a non-signalized intersection.

Non-signalized intersections are also associated with more uncertainty for users, as delays are less than they are at signals which can reduce users' delay tolerance. Total control delay at non-signalized intersections include deceleration delay, queue move-up time, stopped delay in waiting for an adequate gap in flows through the intersection, and final acceleration delay. The *Highway Capacity Software* (Version 4.1d) was used to evaluate levels of service at signalized and non-signalized intersections.

[8] Source: "Highway Capacity Manual," Exhibits 18-4, 19-1 and 20-2 Transportation Research Board, 2010, Update.

C. Street Level of Service Measures

Two performance measures are used to characterize vehicular LOS for a given direction of travel along an urban street segment. One measure is travel speed for through vehicles. This speed reflects the factors that influence running time along the link and the delay incurred by through vehicles at the boundary intersection. The second measure is the volume-to-capacity ratio for the through movement at the downstream boundary intersection. These measures indicate the degree of mobility provided by the segment. ***Table 4*** contains the street level-of-service definitions, which are based on average travel speed of Brier Road and 228th Street SW.

Table 4: Level of Service Measures for Streets (All-Way Stop) [9]

LOS	AVG. TRAVEL SPEED (MPH)	GENERAL DESCRIPTION
A	> 25	Free flow operations at average travel speeds. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Stopped delay is minimal.
B	19 to 24.9	Reasonably unimpeded operations. Ability to maneuver is only slightly restricted and stopped delays are not bothersome. Drivers are not generally subjected to appreciable tension.
C	13 to 18.9	Stable operations. Ability to maneuver may be more restricted than in LOS B, longer queues may contribute to lower average travel speeds.
D	9 to 12.9	Borders on a range on which small increases in flow may cause substantial decrease in average travel speeds.
E	7 to 8.9	Is characterized by significant intersection approach delays and average travel speeds of one-third the free flow speed or lower.
F	< 7	Traffic flows at extremely low speeds below one-third of the free flow speed. High approach delays at intersections.

Table 5 contains the street level-of-service definitions, which are based on average travel speed of all streets in the City other than Brier Road and 228th Street SW.

Table 5: Level of Service Measures for Streets (Two-Way Stops)

LOS	AVG. TRAVEL SPEED (MPH)	GENERAL DESCRIPTION
A	>21	Free flow operations at average travel speeds. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Stopped delay is minimal.
B	17 to 21	Reasonably unimpeded operations. Ability to maneuver is only slightly restricted and stopped delays are not bothersome. Drivers are not generally subjected to appreciable tension.
C	13 to 18.9	Stable operations. Ability to maneuver may be more restricted than in LOS B, longer queues may contribute to lower average travel speeds.

[9] Source: "Highway Capacity Manual," Exhibit 17-2 Transportation Research Board, 2010.

LOS	AVG. TRAVEL SPEED (MPH)	GENERAL DESCRIPTION
D	12.5 to 17	Borders on a range on which small increases in flow may cause substantial decrease in average travel speeds.
E	7.5 to 12.5	Is characterized by significant intersection approach delays and average travel speeds of one-third the free flow speed or lower.
F	<7.5	Traffic flows at extremely low speeds below one-third of the free flow speed. High approach delays at intersections.

D. Minimum Level of Service Standards

The following minimum level of service standards are adopted for streets and intersections within the City of Brier.

Table 6: Adopted Minimum Level of Service for Streets and Intersections

STREET TYPE	LOS
Neighborhood Streets	C
Minor Traffic Streets	C
Major Traffic Streets	D
INTERSECTION TYPE	**LOS**
Neighborhood Street / Neighborhood Street	C
Neighborhood Street / Minor Traffic Street	C
Neighborhood Street / Major Traffic Street	D
Minor Traffic Street / Minor Traffic Street	C
Minor Traffic Street / Major Traffic Street	D
Major Traffic Street / Major Traffic Street	D

E. Existing Street and Intersection Level of Service

Table 7 and ***Table 8*** show a sample of major roads and intersections in the vicinity of Brier for comparison of existing levels of service.

Table 7: Existing Level of Service on Major Streets (PM Peak Hour) [10]

STREET	LENGTH (MILES)	RUNTIME PER MILE	TOTAL DELAY (SEC)	ARTERIAL SPEED (MPH)	LOS
228th Street SW	0.82	2:00	17	26	C
Brier Road	0.66	2:00	8	27	A
232nd Street SW	0.25	2:24	14	21	B
Old Poplar	0.61	2:00	15	25	B

[10] Source: PACE Engineers, 2015.

Table 8: Existing Level of Service at Major Intersections (PM Peak Hour) [11]

INTERSECTION	BOUNDARY INTERSECTION TYPE	DELAY [12]	LOS
228th Street SW / Brier Road	All-Way Stop	17	C
236th Street SW / Brier Road	Two-Way Stop	8	A
232nd Street SW / 35th Avenue W	Two-Way Stop	14	B
Brier Road / Old Poplar	Minor Leg Controlled	15	B

Minor Streets in Brier typically have a LOS A. Since these streets do not provide routes through the City, they are unlikely to experience an increase in traffic due to growth in surrounding jurisdictions. Within Brier, the highest-level street is a major street. Major Streets currently experience a LOS B during the peak hour, but function at a higher LOS at other times. The streets in Brier classified as major streets are:

- Brier Road / Poplar Way
- Old Poplar Way
- 228th Street SW

[11] Source: PACE Engineers, 2015.

[12] Note: Analysis based on HCS 2010 results using HCM 2010 control delays as reported in seconds per vehicle and LOS. At stop controlled intersections LOS and average control delays for stop controlled movements are reported only.

IV. NEEDED FACILITIES AND SERVICES

1. Transportation System Improvements

A. Traffic Volumes Forecast

By 2035, the population of Brier is projected to grow to 7,011, an increase of 15.0% over the year 2010. Estimated 2015 traffic volumes were projected to 2035 to determine impacts on the City's transportation system. ***Figure 5*** shows the forecast volume. The forecast volume indicates the future demands on Brier's roads.

Future daily traffic volumes on the City's Major and Minor Traffic streets are estimated on ***Table 9***. The combination of continued growth of southwest Snohomish County, probable improvements in the regional highway network, and a greater choice in alternative transportation modes, make these estimates tentative. To be consistent with the work completed in 1998 and historical growth within the city, future daily traffic demands were estimated based on an average increase of approximately 1.0% per year.[13]

Intensive development is not expected to occur in Brier as the majority of the vacant land has been developed. Much of the remaining undeveloped land is undevelopable due to sensitive areas, and land use restrictions. In addition, there are no industrial sites. A small expansion of the business district may occur, expanding the business district from 2.5 acres to 5.15 acres. This possible change is not expected to have a noticeable impact on traffic. Based on the 2035 projected volumes, existing arterial / street levels of service are not likely to change during the planning period.

Table 9: Average Daily Trips, Existing and Projected [14]

	2015 MEASURED VOLUMES	2035 PROJECTED VOLUMES
Poplar Way	9,420	11,500
228th Street SW, west of Brier Rd	8,420	10,300
Brier Road, north of 228th	5,650	6,900
Brier Road, south of 228th	5,200	6,350
228th Street SW, east of Brier Rd	3,850	4,700
Brier Road, south City Limits	3,600	4,400
Vine Road / 216th east of Poplar Way	3,160	3,850
214th Street SW	1,250	1,525
Old Poplar Way	1,060	1,300

[13] The traffic volume forecast assumes that 236th Street SW will not be opened to through traffic.
[14] Source: PACE Engineers, 2015.

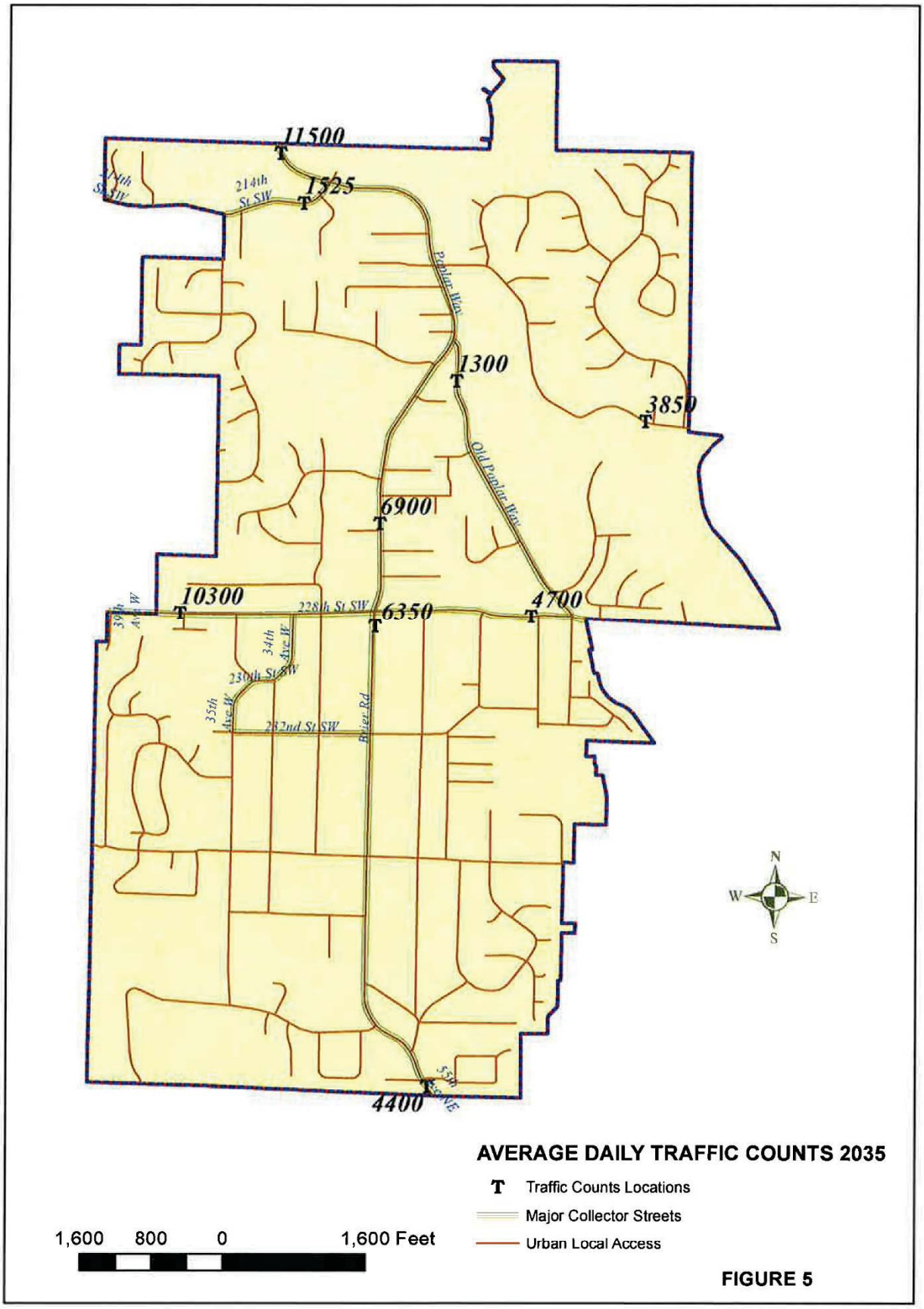

11500
214th St SW
1525
Poplar Way
1300
3850
Old Poplar Way
6900
10300
228th St SW
6350
4700
39th Ave W
34th Ave W
230th St SW
35th Ave W
232nd St SW
Brier Rd
4400
N
W
E
S
AVERAGE DAILY TRAFFIC COUNTS 2035
T Traffic Counts Locations
Major Collector Streets
Urban Local Access
1,600 800 0 1,600 Feet

FIGURE 5

Future intersection levels of service for 2035 at key intersections are shown in ***Table 10***. The all-way stop controlled intersection of 228th Street SW and Brier Road is estimated to operate at LOS C by 2035. Stop controlled movements at all other intersections would operate at LOS C or better. While some intersection levels of service would lower significantly over the planning period, the City's adopted levels of service standards would continue to be met.

Table 10: Projected 2035 Intersection Level of Service (PM Peak Hour)[15]

INTERSECTION	LOS	DELAY (SEC)	MINIMUM LOS
228th Street SW / Brier Road	C	20	D
236th Street SW / Brier Road	B	11	D
232nd Street SW / 35th Avenue W	C	19	D
Old Poplar Way / Brier Road	C	16	D

B. Future Transportation System Development and Management

Forecasting future traffic volumes and levels of service helps the City to plan for the transportation facilities needed as a result of growth. This section discusses ways that the City can respond to the increased demand on the transportation system. As shown below, by planning for needed roadways and through incorporating transportation demand and system management programs, the adopted level of service standards will be maintained.

1) Future Roads

Brier has limited room for additional development and expansion of the transportation system. Development during the last planning period was focused in the triangle formed by Old Poplar Way, Brier Road and 228th Street SW. The new roads in this area connect with Old Poplar Way and Brier Road. In the next two decades, there is growth potential along Poplar Way from the north city limit to Vine Road. Any new roads in this area would connect with Poplar Way. Other growth would be dispersed on occasional vacant lots or where lots are redeveloped. Under this scenario, no specific street would experience the brunt of significant new traffic volumes, as the growth in traffic would be spread throughout the City.

Several streets will need overlays in the next 10 – 15 years, according to the Public Works Department. These include:

- 239th Street SW – 27th Place W to end

[15] Source: PACE Engineers, 2015.

- 239th Place SW – 25th Avenue W to end
- 34th Place W – Alaska Road to end
- 31st Place W – 238th Street SW to end
- 37th Place W – 236th Street SW to end
- 31st Avenue W – Russet Road to end
- Poplar Way – Old Poplar Way to North City Limits

No other significant transportation system improvements needs are projected at this time.

2) Transportation Demand Management

Another way to address the future transportation system demands is through the use of transportation demand management (TDM) techniques. This is a term used for a broad range of strategies that are intended to reduce and reshape use of the transportation system. These strategies focus on reducing or changing the amount of use of the transportation system rather than increasing the amount / availability of the system itself (i.e., streets, traffic signals, etc.) TDM is beneficial in that it can help to reduce the number of cars on the road, and thereby improve the air quality in the city and throughout the region, reduce the consumption of petroleum fuels, and reduce traffic congestion in the city and in the region without constructing new roads.

Considering TDM at the comprehensive plan level is important because it can uncover alternatives to investment in new, expensive city and regional capital projects. It can also extend the life cycle of existing infrastructure, such as streets.

TDM can be implemented in Brier using a range of strategies, including:

- Alternative Mode Support Strategies such as public education and promotion, and ride matching services.
- Worksite-Based Strategies, such as alternative work schedules
- Land Use Strategies, such as compact residential development, mixed land uses, jobs / housing balance, affordable housing and development impact mitigation
- Programmatic and policy support strategies, such as trip reduction ordinances and programs, and support of new institutional relationships
- Telecommunications strategies, such as telecommuting, and internet-based strategies, and
- Pricing strategies, such as parking pricing, and transit and vanpool fare subsidies

Strategies that can be implemented without large budgetary expenditures include encouraging carpooling and vanpooling, promoting transit use, and promoting bicycling and walking. Also, working with Community Transit to offer one of its many public awareness campaign tools in the City is a strategy that would require little new expenditure to encourage transit

alternatives to reduce automobile trips. In addition, the City will work with Community Transit to increase service in Brier in order to have more opportunities for transit use.

Increasing transit ridership to optimum levels would also be a significant TDM measure in the City.

Land use planning also can be an effective, long-term TDM strategy for the City. It includes measures such as:

- Increasing housing density and mix of uses around areas already served by transit. This would require a change to the City's zoning however which is not anticipated at this time
- Considering custom transit strategies
- Consider mixed-use development. Again this would require a change to the City's zoning which is not anticipated at this time.
- Improving the jobs / housing balance within the city. Again this would require a change to the City's zoning which is not anticipated at this time.
- Improving bike and pedestrian support facilities and amenities
- Insuring that future development are pedestrian and bicycle friendly

All of these measures would reduce the volumes of traffic in the city and region without significant investment in transportation system improvements. Appendix E includes detailed discussion of key strategies the City could consider in implementing its TDM program.

3) Transportation System Management

Transportation system management is intended to achieve maximum efficiency of the current system without adding major new infrastructure. An efficient system in Brier will have a positive impact on the overall transportation system in the region. Other benefits of transportation system management are cost savings in not having to build new roads, reduced traffic congestion, and reduced air pollution.

Brier's transportation system is fairly efficient, especially since traffic congestion and capacity are not issues the City has had to face. However, the City is committed to a balanced and efficient transportation system, and recognizes that improvements to the existing system may be necessary as the population grows. Increased transit service to enhance the links between surrounding communities is a system improvement that could be implemented in the near term. This service could include additional bus lines or re-instituting door-to-door service.

The City will also monitor busy intersections, such as Brier Road and 228th Street SW, to ensure that traffic flows smoothly through them. Future improvements, if necessary, might include, signals, or roundabouts.

4) Traffic Management

Effective traffic management on the existing streets will reduce traffic speeds, vehicle noise, visual impacts and through traffic volumes in residential neighborhoods by physical, psychological, visual, social and legal (regulatory and enforcement) means. ***Table 11*** lists common actions of traffic management programs.

Table 11: Traffic Management Activities [16]

REDUCING…	BY WHAT MEANS	EXAMPLES
Through Volumes	Physical	Traffic circles, chicanes, or curb bulb-outs. Installation of signs such as "Residential Street; Local Access Only"
Vehicle Noise	Psychological; Physical	Variable-spaced paint stripes to reduce speeds and thus noise. Landscape buffers and planter strips.
Visual Impacts	Visual	Landscaping to block through views.
Traffic Speeds	Social; Physical	Neighborhood "Speed Watch" program, and / or implementation of traffic calming methods listed above. Construction of narrower streets, especially when lined with trees or other landscaping.
Accidents	Legal	Strict speed enforcement; spot safety improvements

Strategies for achieving effective traffic management are as follows:

- Education, encouragement and enforcement programs such as "emphasis patrols" by local police to catch speeders, elementary school programs to teach and reinforce "defensive walking and biking habits" to school children, or speed watch programs by residents.
- Laws and ordinances – prohibiting through trucks in residential areas, posting speed limits in residential areas, or on-street parking restrictions.
- Traffic control devices – ranging from turn prohibitions at key entry points to successions of stop signs.
- Geometric design features – physical restrictions to induce low speed travel such as narrow streets, traffic circles, chicanes, bulb-outs or chokers, and traffic diverters and street closures.

C. Impact of Brier's Transportation and Land Use Plan on Adjacent Jurisdictions

The future development within Brier's City Limits and in its Planning or Municipal Urban Growth Area will consist primarily of single-family residential dwellings.

Non-residential development is likely to include new parks and open space or redevelopment of neighborhood business uses located within Brier. Since there

[16] Source: Adapted from WSDOT A Guidebook for Residential Traffic Management.

are limited employment and shopping opportunities within the City, residents will continue to go west to Mountlake Terrace (via 228th Street SW and 214th Street SW) and north to Lynnwood (via Poplar Way, through unincorporated Snohomish County) for employment, shopping, or to reach I-5 for travel to Seattle, Everett, or Bellevue / East Side. Forecast volumes on these two streets show that these two adjacent jurisdictions would experience increased traffic from the City.

Additional traffic will head east through Bothell, possibly via Vine Road, Atlas Road, and 228th Street SW, to reach the Canyon Park. Traffic is likely to increase for people traveling south-bound on Brier Road through Lake Forest Park to reach north Seattle. Traffic forecasts show some increases on these south-bound streets, though the degree to which these southern jurisdictions would experience City traffic is less than for Mountlake Terrace and Snohomish County.

Given the nature of the forecast land use for 2035 in Brier, traffic patterns are likely to remain similar to current patterns, although there is likely to be some additional traffic generated by the new development. There may be some traffic congestion and associated delays on major streets, particularly during morning and afternoon commute hours. Adjacent jurisdictions would likely experience some increase in volumes on streets connecting with the City.

Impacts of the adjacent jurisdictions of Mountlake Terrace, Lynnwood, Snohomish County, Bothell, and Lake Forest Park on Brier are also anticipated. As neighboring cities and the unincorporated County increase in population, there will be an increase in non-local through traffic traveling through the City on Brier Road as well as on 236th Street SW, 228th Street SW and Vine / Poplar Way. Existing levels of service on arterials are not likely to change, however, even assuming projected through traffic. Additional coordination with these jurisdictions is essential so that no jurisdiction has a substantial increase in traffic that will reduce its level of service.

D. Coordination of Land Use and Transit Service

Future residential development in Brier is planned to continue within the established pattern of zoning. It is anticipated that Brier's development will continue to support at least one commuter bus line associated with a Park and Ride lot. Much of the recent development has been located near the center of Brier, which is within walking or biking distance to the Park and Ride Lot. This could result in an increase in bus ridership and / or carpooling or vanpooling. Accessory dwelling units, which are allowed in Brier, should be especially encouraged to locate within one mile of the Park and Ride Lot or 228th Street SW to further encourage transit use, vanpooling, carpooling, walking, and bicycling.

In addition, it is anticipated that non-motorized travel will increase during the planning period because more sidewalks, multi-use trails, and connections to existing trails will be built. These new sidewalks and trails can be used to encourage alternative forms of commuting by making it easier to walk or bicycle to the Park and Ride Lot, or to connect to one of the regional trails such

as the Interurban and Centennial Trails to the west and north, and to the Burke-Gilman trail to the south, all of which are located near employment centers. Education about alternative transportation modes, trip reduction, and non-motorized travel will be very important as the City grows and traffic congestion in the Puget Sound Region increases.

Community Transit also has policy guidelines to encourage public transportation systems to reduce traffic congestion, promote energy conservation, and improve mobility within the community. The foundation of these policies is to effectively coordinate land use decisions with public transportation services. Brier's efforts to coordinate land use and mobility, as described above, should demonstrate the City's commitment to a balanced and efficient transportation system.

2. Proposed Transportation Facilities

A. Proposed Street System Classification

The street classification criteria shown in Appendix B were applied to Brier's transportation system once future street volumes had been forecast. ***Figure 6*** shows the future street classifications. The streets are classified similarly to the 2004 classifications with some exceptions.

Reflecting Brier's residential character, the majority of the streets would remain Neighborhood Traffic and Local Neighborhood Service Streets with 1,000 or fewer daily trips. Several streets serve enough neighborhoods to warrant higher-level classification as a Minor Traffic street, with 1,000 to 3,000 daily trips.

Minor Traffic Streets would include:

- Vine Road / 216th Street SW east of Poplar Way
- Old Poplar Way
- 214th Street SW
- 236th Street SW
- 34th Avenue SW
- 36th Avenue SW

The highest level of streets in Brier is Major Traffic Streets, which carry 3,000 or more vehicles a day and function as through roadways. The streets that would fit the criteria for Major Traffic Streets in 2035 in Brier would be Brier Road / Poplar Way and 228th Street SW.

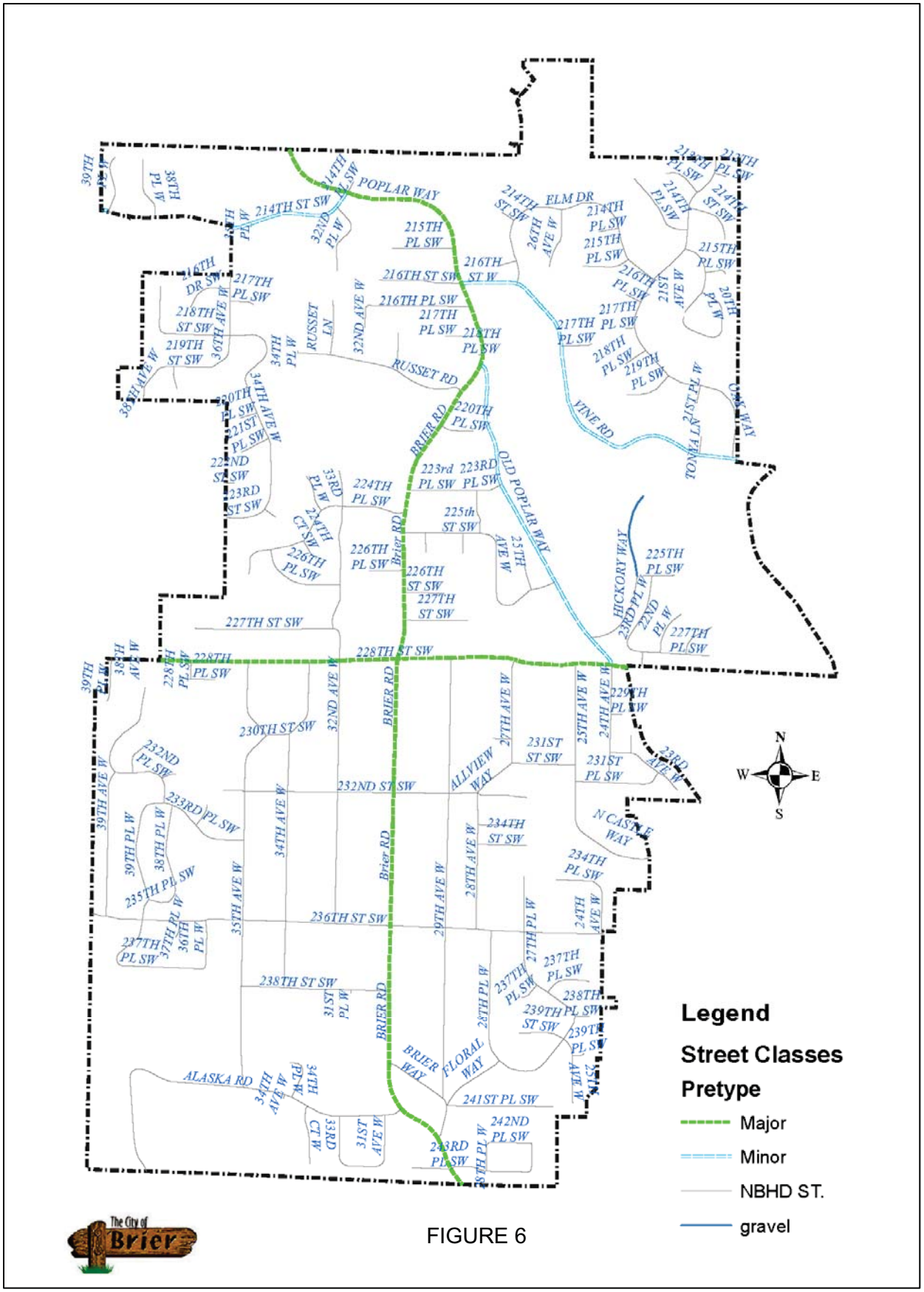

POPLAR WAY
214TH ST SW
ELM DR
215TH PL SW
216TH ST SW
216TH PL SW
217TH PL SW
218TH ST SW
219TH ST SW
RUSSET RD
RUSSET LN
BRIER RD
220TH PL SW
OLD POPLAR WAY
VINE RD
223RD PL SW
224TH PL SW
225th ST SW
226TH PL SW
226TH ST SW
227TH ST SW
228TH ST SW
229TH PL SW
230TH ST SW
231ST ST SW
231ST PL SW
232ND ST SW
ALLVIEW WAY
233RD PL SW
234TH ST SW
234TH PL SW
235TH PL SW
236TH ST SW
237TH PL SW
238TH ST SW
239TH ST SW
239TH PL SW
241ST PL SW
242ND PL SW
243RD PL SW
HICKORY WAY
N CASTLE WAY
BRIER WAY
FLORAL WAY
ALASKA RD
32ND AVE W
34TH AVE W
36TH AVE W
37TH AVE W
38TH AVE W
39TH AVE W
27TH AVE W
28TH AVE W
29TH AVE W
31ST AVE W
24TH AVE W
25TH AVE W
23RD AVE W
21ST AVE W
N
W
E
S
Legend
Street Classes
Pretype
Major
Minor
NBHD ST.
gravel

FIGURE 6

B. Trail Projects

A walkway, sidewalk and trail classification map is shown in ***Figure 7***, including a proposed perimeter and loop multi-use trail. Shown are a number of soft-surface, multi-use trails. Most of these trails are part of the proposed perimeter trail. In addition, the locations of several possible off-road trails are identified.

Figure 8 shows proposed bikeways. Again, a number of the proposed bikeways are designed to be part of a perimeter trail.

C. Motorized Projects

See the Capital Facilities Element for the schedule of transportation system improvements. Brier will continue to improve its street system as shown in the Capital Facilities Plan (CFP) included in that Element. It includes projects designed to correct identified maintenance problems and roadway deficiencies. Other projects on the list include non-motorized improvements and traffic calming improvements.

Table 6 in the Capital Facilities Element indicates the road sections, type of projects, and estimated cost of the improvements. Implementation of these projects will help the City maintain its current level of service as it grows.

D. Non-Motorized Projects

In addition to the capital facilities projects, the City continues to install new sidewalks and crosswalks to increase safety. Since 2004, sidewalks with associated crosswalks were installed along Old Poplar Way, along 34th Ave W between 228th St SW and 230th St SW, along 230th St SW between 34th Ave W and 35th Ave W, and along 230th St SW south to 232nd St SW, Additional safety improvements will continue to be constructed as conditions warrant.

The City's Six-Year Transportation Improvement Program (TIP) calls for ten projects over the period 2016 to 2021, including four (4) projects to construct or replace curb, gutter and sidewalks — as well as two asphalt overlay projects.[17] This TIP builds upon the analysis and projection of needed projects and available revenue found in the Capital Facilities Element. The estimated expenditure would be $1,311,000.

The next section as well as the Capital Facilities Element discusses alternative revenue sources for funding these projects.

[17] See Appendix F for the detailed Six Year TIP.

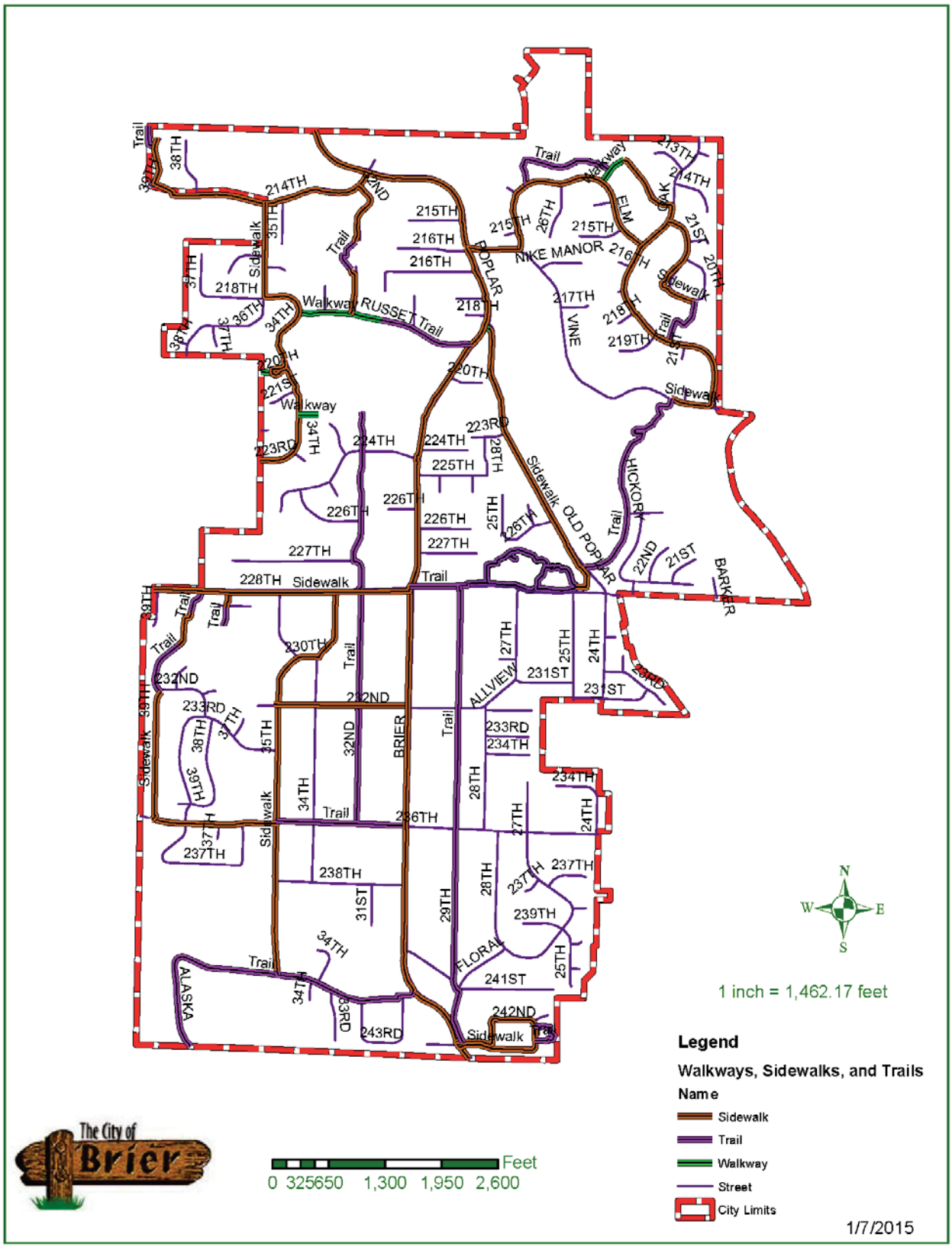
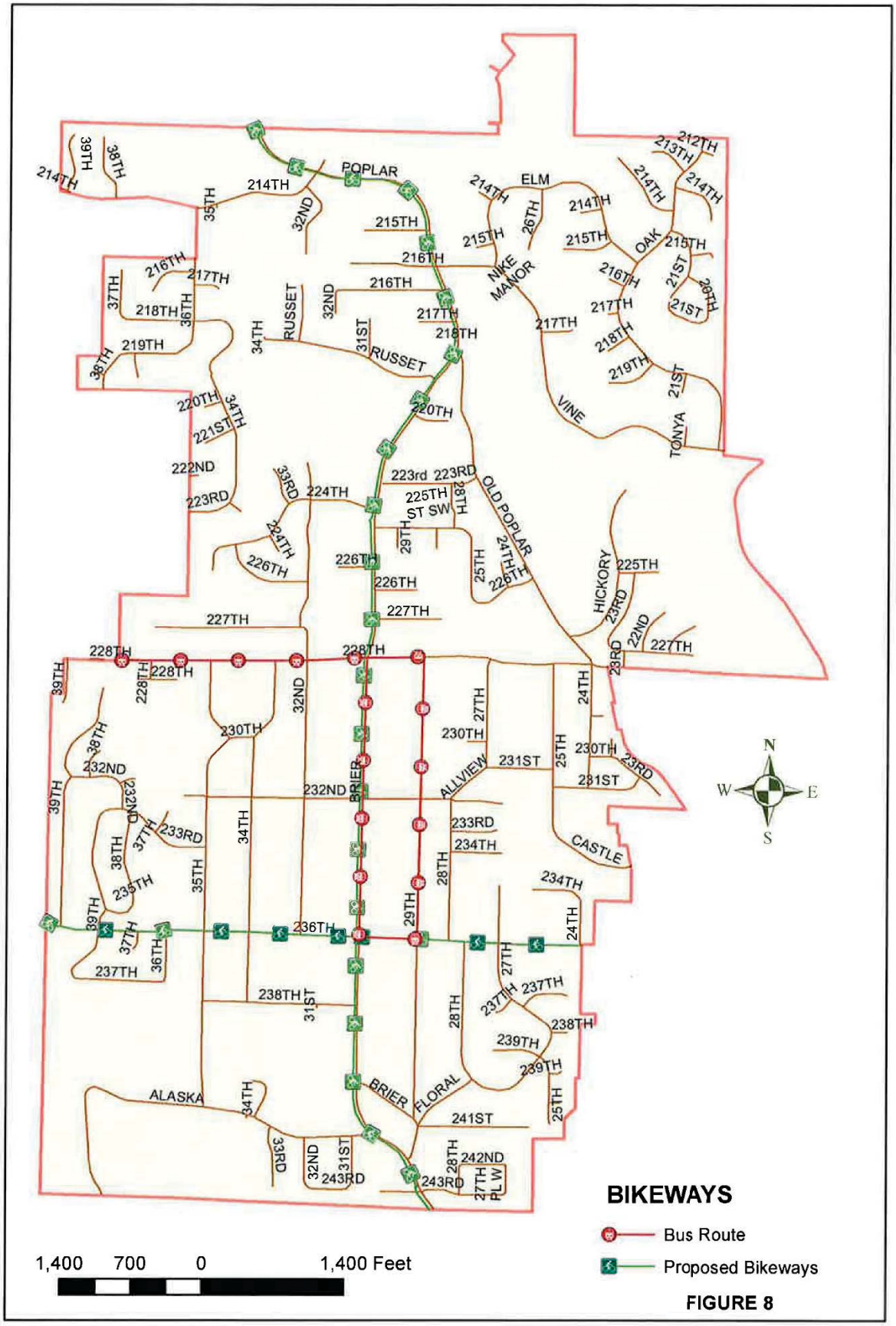


Figure 7: Walkways, Sidewalks and Trails


POPLAR
ELM
OAK
NIKE MANOR
RUSSET
VINE
TONYA
OLD POPLAR
HICKORY
ALLVIEW
CASTLE
BRIER
FLORAL
ALASKA
214TH
215TH
216TH
217TH
218TH
219TH
220TH
221ST
222ND
223RD
224TH
225TH
226TH
227TH
228TH
230TH
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234TH
236TH
237TH
238TH
239TH
241ST
242ND
243RD
N
W
E
S
1,400 700 0 1,400 Feet
BIKEWAYS
Bus Route
Proposed Bikeways

FIGURE 8

V. FINANCING NEEDED FACILITIES AND SERVICES

1. Funding

Over the past two decades, the traditional sources of state and municipal public road funding have declined and securing of funding has become more competitive. Funding road projects, especially in light of the rapidly increasing costs for improvements, has become more difficult. The main outcome of reduced funding is that some projects might be delayed if there is not sufficient funding in a given year.

Despite the funding challenges, Brier has received funding in recent years from a variety of sources to assist in paying for its road improvements. Funding sources have included:

- 2013 — $8,414 from the Washington State Department of Transportation Improvement Board (TIB) for design and construction engineering on public street overlay;
- 2013— $473,954 each from the Public Works Board for design and construction of the Scriber Creek Pedestrian Bridge
- 2013 — $167,418 from the Washington State TIB for design and construction engineering and funding assistance on the Brier Road sidewalk improvements;
- 2014 — $346,102 from the Washington State Department of Transportation Improvement Board (TIB) for design and construction engineering on public street overlay;
- 2015 — $2,830 from the Washington State Department of Transportation Improvement Board (TIB) for design and construction engineering on public street overlay;

If there are potential funding shortfalls based on the projected transportation system needs, the City will need to raise additional funds for transportation improvements, consider revising its level of service standards, or reassess its land use assumptions.

It is forecast that the level of service for streets will not change by 2035; the level of service for intersections will change, though none of the intersections would drop below City-adopted LOS standards, even with the anticipated growth and development.

Therefore, the focus of the strategy in this Element as well as in the Capital Facilities Element is on funding solely. In Brier, raising additional funds will primarily rely on alternative, outside sources, rather than raising City property taxes or floating bonds to fund transportation projects. Recognizing that traditional sources of funding are often inadequate, a number of alternative funding strategies could be used to pay for Brier's roadway projects.

These strategies include the following sources:

- STP funding is the Six Year Transportation Improvement Program. This is State distributed funding.

- TIA funding is the Transportation Improvement Account that grants funds from the Transportation Improvement Board (TIB) for eligible projects.
- LID, or Local Improvement District funding assesses fees on property owners who choose to tax themselves to finance improvements.
- Impact fees and frontage mitigation assess developers for the cost of roadway improvements. (This option is discussed in greater detail below.)
- Transportation Benefit Districts (TBD) are quasi-municipal corporations with independent taxing authority, including the authority to impose property taxes and impact fees for transportation purposes. RCW 36.73.020 governs formation by counties, and RCW 35.21.225 governs formations by cities. TBDs have several revenue options subject to voter approval:
  - Property taxes – a one-year excess levy or an excess levy for capital purposes
  - Up to 0.2% sales and use tax
  - Up to $100 annual vehicle fee per registered vehicle in the district
  - Vehicle tolls

  TBDs have two revenue options that do not require voter approval, but are subject to additional conditions. To impose either fee, the TBD's boundaries must be countywide or citywide, or if applicable, in the unincorporated county. Foregoing a vote is an option. A county or city still has the option of placing either fee to the vote of the people as an advisory vote or an actual requirement of imposition. The two options are:

  1) Annual vehicle fee up to $20.

     This fee is collected at the time of vehicle renewal and cannot be used to fund passenger-only ferry service improvements. (HB 1485 increases this option to $40.)

  2) Transportation impact fees on commercial and industrial buildings.

     Residential buildings are excluded. In addition, a county or city must provide a credit for a commercial or industrial transportation impact if the respective county or city has already imposed a transportation fee.
- Federal and State transportation funding, such as the new TEA-21 (Transportation Equity Act for the 21st Century), could be requested by the City. Other funds include:
  - Public Works Trust Fund – The State Public Works Board provides low interest loans available for capital facilities planning, emergency planning and construction of bridges, roads, domestic water, sanitary sewer, and storm sewer.
  - Community Economic Revitalization Board Grant (CERB) – CTED provides low interest loans and occasionally grants to finance sewer, water, access roads, bridges and other facilities for a specific private sector development.
  - Urban Arterial Program (UAP) – The Washington State Transportation Improvement Board (TIB) provides funding for projects to alleviate and

prevent traffic congestion. In order to be eligible, roads should be structurally deficient, congested by traffic, and have geometric deficiencies or a high incidence of accidents. Funds are awarded on an 80% Federal / 20% local matching basis.

- Transportation Improvement Account Grants (TIA) – The State TIB provides funding for projects to alleviate and prevent traffic congestion caused by economic development or growth. Eligible projects should be multi-agency, multi-modal, designed to reduce congestion and encourage economic development, and partially funded locally. Funds are awarded on an 80% Federal / 20% local matching basis.
- Surface Transportation Program (STP) Grants – The Puget Sound Regional Council (PSRC) provides grants for road construction, transit capital projects, bridge projects, transportation planning, and research and development. Projects must be on the Regional (TIP) list, and must be for roads with higher functional classifications than local or rural minor collectors. Funds are available on a Federal / local match, based on the highest-ranking projects from the Regional TIP list.
- IAC funding is from the Inter Agency Committee for Outdoor Recreation – The program combines funds from several sources and makes them available for outdoor recreation and conservation purposes. Agencies which apply need to have a parks and recreation plan.

Transportation improvements are also funded and constructed by developers for subdivisions and other land development projects in order to meet the City's development regulations and to mitigate project impacts. These regulations also extend to major and minor traffic streets in the project vicinity where project impacts are identified through the SEPA process.

Developer assessments can take on many different forms. Traditional methods include the Local Improvements District (LID). Its application has been generally restricted to properties that abut a road improvement and that will directly benefit. However, the concept is extended to a greater benefit area that may include properties not abutting the road improvement.

The LID is still considered one of the most equitable and desirable forms of developer assessment. It causes road improvement costs to be spread over all potential benefactors, including existing as well as new developments, and a reasonable public share. It permits execution of road improvements at such a time as it is necessary; and it permits the recovery of the improvement costs incrementally over a 10 to 20 year period of time at municipal bond interest rates.

By avoiding "up front" capital assessments, development projects can be more economically viable. By spreading recovery costs over time, such costs can be better handled commensurate with the cash flow economics of a completed land development project. The public share of the road improvement costs can also be collected incrementally over a measured period of time.

A practice that is becoming more commonly used by municipal governments is an "up front" assessment of development projects for desired road improvements. These requirements are being imposed during the SEPA and permitting processes as conditions of development permit. They take on

different forms ranging from various offsite road construction requirements to direct cash assessments for off-site road improvements to be paid prior to occupancy.

An outcome of the 2015 Plan Update is that Brier will be in a better position to seek alternative funding sources as a result of meeting GMA and PSRC requirements. In addition, stronger policies and ordinances will be in place to require improvements for needs generated by new development. By continuing a multi-faceted funding approach and considering new funding sources, such as impact fees or public / private partnerships, Brier will be able to continue to improve its transportation system.

2. Capital Facilities Plan

The transportation capital facilities priorities are incorporated into the City's overall capital facilities plan which is located in the Capital Facilities Element. Potential funding sources from the list above are identified for each project included in the Capital Facilities Plan.

As noted previously, the City does not have any regional or interstate transportation systems that require long-term coordination and does not currently anticipate complex street improvements. Therefore, needed projects are evaluated on an annual basis for inclusion in the 6-Year Project List and no projects are identified for the 7- to 20-Year time period.

APPENDIX A: CLASSIFICATION CRITERIA

MAJOR TRAFFIC STREET (COLLECTOR)

Functional Purpose

- Principal route for movement of traffic through and to Brier. This class of street connects local cities and commercial areas to Brier. In addition, this street connects to higher-level regional streets outside of Brier city limits. This level of street carries through trips.

Physical Design Features

- Residential areas should be buffered by distance and landscaped with planted strips.
- Landscaped planting strip with trees.
- Intersections at grade with direct access to adjacent property.
- Traffic controls at intersection with other streets.
- Provisions made for pedestrian use, including frequent crosswalks and signage.
- May be designed to include bicycle routes, walking paths and equestrian trails.
- Two lanes.
- Spacing between streets of approximately 1 mile.

Operational Characteristics

- Speeds of 25 to 35 mph.
- Daily traffic volume of 3,000+ vehicles.
- Traffic on other lower classifications of streets stop at Major Traffic Streets.
- Parking restricted as necessary for the movement of motorized and non-motorized traffic.
- Traffic control used to control turning movements as necessary for safe and efficient flow of traffic.

MINOR TRAFFIC STREET

Functional Purpose

- Serves as a distributor of traffic from a Major Traffic Street to less important streets, to secondary generators such as schools and parks and to serve trips between areas within and immediately around Brier.
- Has less traffic carrying capacity than Major Traffic Streets. The design and operational controls should give preference to the distribution of traffic and should discourage through trips.

Physical Design Features

- Intersections at grade with direct access to adjacent property.
- Landscaped planting strips.
- Traffic signs at intersections with other streets as warranted to provide for the safe

distribution of traffic.

- Incorporates two lanes; incorporate a two-way, left-turn lane if necessary.
- Spacing between Minor Traffic Streets of .25 mile.
- Provision of safe pedestrian facilities along such routes. The design should provide for maximum separation between pedestrian and motorized travel lanes and for safe and frequent pedestrian crossings. Pedestrian crossing prohibitions would be unusual at any intersection with another Minor Traffic Street or street of lower classification.
- May be designated bike, pedestrian or equestrian routes, incorporate paths or horse lanes or be open for the general use of non-motorized vehicles and horses.

Operational Characteristics

- Typical traffic speeds of 25 mph except 20 mph in school zones.
- Traffic volumes of 1,000 to 3,000 vehicles per day.
- Traffic on Neighborhood Traffic Streets is stopped to give the right-of-way to traffic on Minor Traffic Streets. Access between Minor and Local Neighborhood Service Streets may be restricted to protect adjacent land uses from undesirable levels of traffic.
- On-street parking generally permitted, but may be restricted to facilitate efficient traffic flow.
- Access to adjacent property may be restricted for safety considerations.

NEIGHBORHOOD TRAFFIC STREET

Functional Purpose

- To collect and distribute traffic from higher level streets to residential areas. The design and operational controls should give preference to the distribution of traffic and should discourage through trips.

Physical Design Features

- Intersections at grade with direct access to adjacent property.
- Landscaped planting strips.
- Intersections with Major, Minor or other Neighborhood Traffic Streets should be signed as warranted to facilitate the safe movement of traffic along each street as well as to facilitate turning movements between such streets.
- The design should provide for safe pedestrian movement along such routes. Pedestrian crossing prohibitions would be unusual at any intersections.
- May have designated path, incorporate non-motorized or horse lanes or be open for the general use of non-motorized vehicles or horses.
- Incorporates two through lanes; two-way, left-turn lanes generally not applied.
- Spacing between Neighborhood Traffic Streets of 500 to 1,000 feet.

Operational Characteristics

- Typical traffic speeds of 25 mph except 20 mph in school zones.
- Traffic volumes of less than 1,000 vehicles per day.

- Traffic on Local Neighborhood Service Streets is stopped to give the right-of-way to traffic on Neighborhood Traffic Streets. Access between Neighborhood and Local Neighborhood Service Streets may be restricted to protect the lower class street and adjacent land uses from undesirable levels of traffic.
- Traffic movement and service to abutting properties are both important functions of Neighborhood Traffic Streets; therefore, parking removal or the acquisition of additional right-of-way for moving traffic should not be undertaken except at specific locations or under special circumstances.
- Parking generally unrestricted except for safety considerations.

LOCAL NEIGHBORHOOD TRAFFIC STREET

Functional Purpose

- Provide access to neighborhoods and driveways and provides on-street parking and access to off-street parking and loading for the immediate residential area. These streets are often residential cul-de-sacs connected to Neighborhood Traffic Streets and occasionally to higher level streets.

Physical Design Features

- Intersections at grade with direct access to adjacent property.
- Landscaped planting strips.
- The design should provide for safe pedestrian movement with safe and frequent pedestrian crossings.
- Typically open for the general use of non-motorized transportation and may be utilized for designated bicycle, pedestrian and equestrian routes.
- One to two through lanes and one to two parking lanes should be provided. Streets should be designed and located to prevent the continuous or unobstructed flow of traffic through a neighborhood.
- Spacing between Local Neighborhood Traffic Streets of 100 to 500 feet.

Operational Characteristics

- Typical Traffic speeds of 25 mph except 20 mph in school zones.
- Traffic volumes as generated by the immediate neighborhood, but generally less than 500 vehicles per day, depending upon the land use intensity and distance between surrounding higher classified streets.
- Intersections with other Local Neighborhood Streets uncontrolled except as found necessary for safety or to control traffic volumes or speeds. The control utilized may consist of signing as guided by the MUTCD or by such restrictive devices as traffic circles or traffic diverters consistent with emergency and other access needs.
- Traffic on Local Neighborhood Service Streets is stopped at intersections with higher classified streets. Access to higher classified streets may be restricted as consistent with emergency access needs to protect the neighborhood from significant volumes of non-local traffic.
- Parking generally unrestricted although restrictions may be applied for emergency vehicle access, and general traffic safety.

SCENIC ROUTE

Functional Purpose

- To provide special landscaping and park-like features to streets or to recognize scenic significance of streets otherwise intended to move traffic and / or provide access. This classification is in addition to a “traffic” street classification.

Physical Design Features

- All types of street design.
- Design may include scenic route signs, medians, benches, planting strips and other features to increase park-like appearance of the street.
- Often concurrent with walkways, bike paths, and multi-use trail.

Operational Characteristics

- As dictated by principal use of the street.

BICYCLE LANE

Functional Purpose

- Roadway of which a portion has been designated by traffic control devices for preferential or exclusive use by bicycles to provide separation from motor vehicle traffic. Typically, they are installed to encourage bicycle use on a particular street.

Physical Design Features

- One-way facilities, one on each side of the street (two-way bicycle lanes are not advisable).
- Typically located between the parking areas and the traffic lanes, or where parking is prohibited, the lanes are located between the curb and the traffic lanes.
- Designated by a painted white line four feet from the curb or five feet from a parked car; and a bicycle symbol painted in the bike lane at intervals of one block.
- Where there are heavy volumes of left turning bicycles, a separate turning lane for bicyclists may be provided.
- General guidelines for striping and signing are in the MUTCD and the AASHTO Guide for the Development of New Bicycle Facilities.

Operational Characteristics

- As dictated by principal use of street.
- A wide range of bicyclist’s speeds (8 to 25 mph) and a wide range of users can be expected.

SIGNED BICYCLE ROUTE

Functional Purpose

- Shared roadways (i.e., bicycle and motor vehicles) which are signed as “Bike Routes.” Typically, they are used to create local recreational loop routes and provide continuity for regional systems.

Physical Design Features

- Designated by installing Bicycle Route signs. Pavement stencils and arrows may also be used to demarcate Bicycle Routes.
- Wide curb lanes (13 to 15 feet side) desirable.
- May or may not have a striped Bicycle Lane.

Operational Characteristics

- As dictated by principal use of street.
- A wide range of bicyclist's speeds (8 to 25 mph) and a wide range of users can be expected.

WALKWAY / SIDEWALK

Functional Purpose

- Paved facility for the exclusive use of pedestrians and slow speed bicyclists. Typically, they are adjacent to all classes of streets and may provide connections between neighborhoods, schools and other destinations where streets do not go through.

Physical Design Features

- Five feet wide minimum. Extra width needed at schools, bus stops, and other high pedestrian locations.
- Concrete where adjacent to streets. Asphalt may be appropriate in some situations through parks and open areas.
- Typically separated from the curb (or edge) of a street by a two to six foot planting strip. May be directly adjacent to the curb in some residential situations.
- On one side of every street. On both sides of street where space allows.

Operational Characteristics

- Walkers are primary users.
- Likely to be mixed use with joggers and children on bicycles.

MULTI-USE TRAIL

Functional Purpose

- Soft surface trail for exclusive use of joggers, walkers, equestrians, and mountain bikes. Typically, they either parallel a street or go through open space in a connected, continuous system.

Physical Design Features

- Soft surface.
- Minimum of three feet wide with a total clearance of six feet up to a height of twelve feet.
- Typically separated from the curb (or edge) of a street by a six foot planting strip. May be directly adjacent to the curb in some situations.
- On one side of a street. Typically, paired with a paved walkway / sidewalk on the other side of a street.

Operational Characteristics

- Likely to be mixed use with joggers, walkers, equestrians, and mountain bikes.

OFF-ROAD TRAIL

Functional Purpose

- Future desired trails show where the potential exists for a connection or linkage, but where research or exploration is needed. The classification serves as an alert to the City of Brier where it may be possible to consider incorporating trails in adjacent developments

Physical Design Features

- As dictated by use. Typically a soft surface, multi-use trail.

Operational Characteristics

- Likely to be mixed use with joggers, walkers, equestrians, and mountain bikes.